
Modifying BuildEdge Pro's Dynamic Components

Introduction

For those who are new to working with SketchUp dynamic components, we would like to begin with a word of caution. The subject of dynamic components is vast, deep, and complex. It is not an area in which the uninitiated should dabble or experiment casually! Those who venture forth should be prepared to deal with the potential confusion that some experience when learning to modify dynamic components. Dynamic components are a powerful feature in SketchUp but, as with all things, with great power comes great responsibility.

With that preamble out of the way, it is important to note that the purpose of this document is to provide users with beginner-level instruction on how to modify the dynamic components that are installed with your BuildEdge Pro software. This document does not provide information about how to create new dynamic components using SketchUp Pro. If you are interested in this latter topic, we suggest you head over to the [SketchUp Knowledge Center](#) and search for the phrase "Creating Dynamic Components" to learn more.

SketchUp Make vs. SketchUp Pro

Individuals who are using BuildEdge Pro in conjunction with the free version of SketchUp (*SketchUp Make*) have the ability to modify some of the properties associated with BuildEdge Pro's dynamic door and window components after a component has been placed in a wall. (SketchUp refers to these modifiable properties as *Component Options*.) For example, a designer who has created a structure with 12 interior doors may wish to change the type of door knob attached to those doors. Using SketchUp's *Component Options* command, the designer has the ability to change the door-knob type for each door, one door at a time.

By contrast, individuals who are using BuildEdge Pro in conjunction with the professional version of SketchUp (*SketchUp Pro*) have the ability to modify BuildEdge dynamic door and window components proactively – before a component has been placed. For example, a designer can modify the dynamic component for a standard swing door and change the default door-knob type from "Knob" to "Handle." Thereafter, each time a standard swing door is added to a structure, it will contain the door "Handle" specified by the designer.

For more information about using SketchUp Make to modify *Component Options*, please refer to the *BuildEdge Pro User's Manual*. For more information about using SketchUp Pro to modify BuildEdge Pro's dynamic components, please read on.

File Locations

Each dynamic component provided by BuildEdge resides in its own “.skp” file. The specific location of these files depends upon the type of computer being used. (Brace yourself; the path is a real doozy!):

PC

C:\Users\[User Name]\AppData\Roaming\SketchUp\SketchUp 201[4/5]\SketchUp\Plugins\BuildEdge\Resources\Components

MAC

On the Mac menu bar, click on *Go* and then hold down the *Options* key on your keyboard until the *Library* listing appears. Navigate to this location:

Application Support/Sketchup 201[4/5]/ SketchUp/Plugins/BuildEdge/Resources/ Components

Note to Windows users: In order to view dynamic-component files, you must enable the “*Show hidden files, folders, and drives*” radio button in the *Folder Options* dialog box.

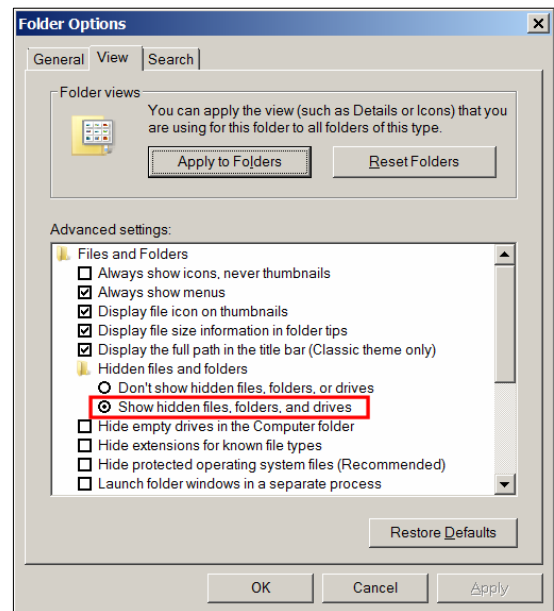


Figure 1: Make sure Windows is set to display hidden files and folders.

WARNING! If you modify your BuildEdge dynamic components and then **reinstall** or **update** your BuildEdge Pro software, your modifications will be overwritten with the default BuildEdge dynamic component files. Therefore, it imperative that you make a copy of your BuildEdge *Components* folder, **prior** to executing a reinstall/update of BuildEdge Pro. You can then overwrite the contents of the default *Components* folder with your modified files.

File Names

Component Type Codes

Once you have navigated to the *Components* folder, you will find that each BuildEdge dynamic component file has a four-character name, followed by the “.skp” extension. The name assigned to each file provides information about the BuildEdge dynamic component the file contains. Specifically, the first two characters of the file name are capital letters that represent the component’s *Type*. The third and fourth characters of the file name are numbers that identify the component’s *Style*. Take for example, the dynamic-component file named *BB01.skp*. The first two characters of the file name (*BB*) indicate that the component is a bifold door. The third and fourth characters (*01*) signify that the door’s *Style* is “Standard.” The list below provides a translation of the first two characters of each of the different dynamic component *Types* provided by BuildEdge Pro:

FILE NAME	COMPONENT TYPE
BB ___.skp	Bifold Door
BC ___.skp	Cased Opening Door
BD ___.skp	Double Door
BF ___.skp	Double Bifold Door
BG ___.skp	Garage Door
BN ___.skp	Rough Opening Window
BP ___.skp	Rough Opening Door
BS ___.skp	Swing Door
BW ___.skp	Window
BY ___.skp	Bypass Door

Component Style Codes

The file name’s numeric characters that indicate the component’s *Style* are different, depending on the component *Type* with which it is associated. The following are the *Style* codes used for BuildEdge Pro’s dynamic-component files, grouped by *Type*:

Style Codes for Bifold (BB) and Double Bifold (BF) Doors:

FILE NAME	COMPONENT STYLE
__ 01 .skp	Standard
__ 02 .skp	Glass
__ 03 .skp	Two Panel
__ 04 .skp	Three Panel
__ 05.skp	<i>User Defined</i>
__ 06.skp	<i>User Defined</i>
__ 07.skp	<i>User Defined</i>
__ 08.skp	<i>User Defined</i>
__ 09.skp	<i>User Defined</i>
__ 10.skp	<i>User Defined</i>

Style Codes for Double (BD), Swing (BS), and Bypass (BY) Doors:

FILE NAME	COMPONENT STYLE
__01.skp	Standard
__02.skp	Glass
__03.skp	Four Panel
__04.skp	Six Panel
__05.skp	<i>User Defined</i>
__06.skp	<i>User Defined</i>
__07.skp	<i>User Defined</i>
__08.skp	<i>User Defined</i>
__09.skp	<i>User Defined</i>
__10.skp	<i>User Defined</i>

Style Codes for Garage (BG) Doors:

FILE NAME	COMPONENT STYLE
__01.skp	Standard
__02.skp	Panels
__03.skp	Glass Panels
__04.skp	<i>User Defined</i>
__05.skp	<i>User Defined</i>
__06.skp	<i>User Defined</i>
__07.skp	<i>User Defined</i>
__08.skp	<i>User Defined</i>
__09.skp	<i>User Defined</i>
__10.skp	<i>User Defined</i>

Style Codes for Windows (BW):

FILE NAME	COMPONENT STYLE
__01.skp	Fixed
__02.skp	Horizontal Slider
__03.skp	Vertical Slider
__04.skp	<i>User Defined</i>
__05.skp	<i>User Defined</i>
__06.skp	<i>User Defined</i>
__07.skp	<i>User Defined</i>
__08.skp	<i>User Defined</i>
__09.skp	<i>User Defined</i>
__10.skp	<i>User Defined</i>

NOTE: The following dynamic component *Types* only have one *Style* associated with them, so there is only one style code for each (01):

- Cased Opening (BC)
- Rough Opening Door (BN)
- Rough Opening Window (BP)

The Complete List

The following is a complete list of BuildEdge dynamic-component file names, along with the component *Type* and *Style* that each represents:

FILE NAME	COMPONENT TYPE / (STYLE)
BB01.skp	Bifold Door (Standard)
BB02.skp	Bifold Door (Glass)
BB03.skp	Bifold Door (2 Panel)
BB04.skp	Bifold Door (3 Panel)
BB05.skp	Bifold Door (User Defined)
BB06.skp	Bifold Door (User Defined)
BB07.skp	Bifold Door (User Defined)
BB08.skp	Bifold Door (User Defined)
BB09.skp	Bifold Door (User Defined)
BB10.skp	Bifold Door (User Defined)
BC01.skp	Cased Opening (Door)
BD01.skp	Double Door (Standard)
BD02.skp	Double Door (Glass)
BD03.skp	Double Door (Four Panel)
BD04.skp	Double Door (Six Panel)
BD05.skp	Double Door (User Defined)
BD06.skp	Double Door (User Defined)
BD07.skp	Double Door (User Defined)
BD08.skp	Double Door (User Defined)
BD09.skp	Double Door (User Defined)
BD10.skp	Double Door (User Defined)
BF01.skp	Double Bifold Door (Standard)
BF02.skp	Double Bifold Door (Glass)
BF03.skp	Double Bifold Door (2 Panel)
BF04.skp	Double Bifold Door (3 Panel)
BF05.skp	Double Bifold Door (User Defined)
BF06.skp	Double Bifold Door (User Defined)
BF07.skp	Double Bifold Door (User Defined)
BF08.skp	Double Bifold Door (User Defined)
BF09.skp	Double Bifold Door (User Defined)
BF10.skp	Double Bifold Door (User Defined)
BG01.skp	Garage Door (Standard)
BG02.skp	Garage Door (Panel)
BG03.skp	Garage Door (Glass Panel)
BG04.skp	Garage Door (User Defined)
BG05.skp	Garage Door (User Defined)
BG06.skp	Garage Door (User Defined)

FILE NAME	COMPONENT TYPE / (STYLE)
BG07.skp	Garage Door (User Defined)
BG08.skp	Garage Door (User Defined)
BG09.skp	Garage Door (User Defined)
BG10.skp	Garage Door (User Defined)
BN01.skp	Rough Opening (Window)
BP01.skp	Rough Opening (Door)
BS01.skp	Swing Door (Standard)
BS02.skp	Swing Door (Glass)
BS03.skp	Swing Door (4 Panel)
BS04.skp	Swing Door (6 Panel)
BS05.skp	Swing Door (User Defined)
BS06.skp	Swing Door (User Defined)
BS07.skp	Swing Door (User Defined)
BS08.skp	Swing Door (User Defined)
BS09.skp	Swing Door (User Defined)
BS10.skp	Swing Door (User Defined)
BW01.skp	Window (Fixed)
BW02.skp	Window (Horizontal Slider)
BW03.skp	Window (Vertical Slider)
BW04.skp	Window (User Defined)
BW05.skp	Window (User Defined)
BW06.skp	Window (User Defined)
BW07.skp	Window (User Defined)
BW08.skp	Window (User Defined)
BW09.skp	Window (User Defined)
BW10.skp	Window (User Defined)
BY01.skp	Bypass Door (Standard)
BY02.skp	Bypass Door (Glass)
BY03.skp	Bypass Door (4 Panel)
BY04.skp	Bypass Door (6 Panel)
BY05.skp	Bypass Door (User Defined)
BY06.skp	Bypass Door (User Defined)
BY07.skp	Bypass Door (User Defined)
BY08.skp	Bypass Door (User Defined)
BY09.skp	Bypass Door (User Defined)
BY10.skp	Bypass Door (User Defined)

The 'Component Attributes' Dialog Box

Now that you know where to find BuildEdge dynamic components and what their file names signify, it's time to pop one open and take a look inside:

1. To begin, open a copy of SketchUp Pro 2014 or SketchUp Pro 2015.
2. From within SketchUp, go to the menu bar and select **File → Import**. An *Open* dialog box will pop up on your screen.
3. Use the *Look in* field at the top of the *Open* dialog box to navigate to the *Components* folder via the following path:

PC

C:\Users\[User Name]\AppData\Roaming\SketchUp\SketchUp 201[4/5]\SketchUp\Plugins\BuildEdge\Resources\Components

MAC

Application Support/Sketchup 201[4/5]/SketchUp/Plugins/BuildEdge/Resources/Components

4. From within the *Components* folder, select the file named *BB01.skp*, and then click on the *Open* button. A "floating" copy of a BuildEdge standard bi-fold door will appear on your screen. Click anywhere on the SketchUp draw screen to lock the component in place.
5. With your bi-fold door now locked in place, right-click on it and, from the context menu, click on *Dynamic Components → Component Attributes*. A *Component Attributes* dialog box like the one pictured at right will open.

Notice that there are three levels of objects displayed in the dialog box. The top level (blue) represents the entire dynamic component. Just below the component level, all the sub-components (red) are listed. Each sub-component is comprised of multiple attributes (green).

In addition to the attributes that are defined for sub-components, there are also attributes defined at the component level. These attributes apply to the component as a whole. The list of component-level attributes for the BuildEdge standard bi-fold door are shown in Figure 3 on the following page.

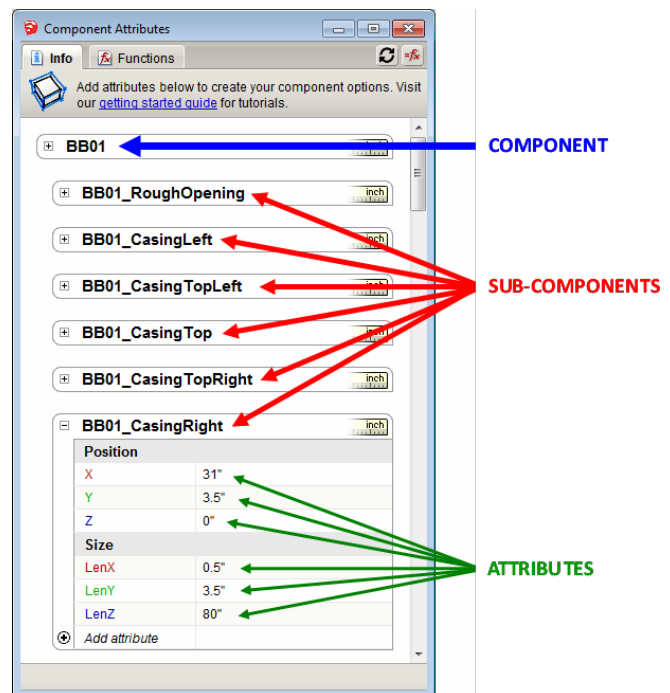


Figure 2: The *Component Attributes* dialog box displays the component name, sub-components, and attributes.

There are two columns associated with the attributes. The column on the left displays the full name assigned to each attribute (e.g. *BB01_01DoorMaterial*). The column on the right displays the default value that has been assigned to each attribute. (e.g. The default value assigned to *BB01_01DoorMaterial* is *White*.)

Attribute Names

The name assigned to each attribute consists of three parts:

1. The file name associated with the dynamic component as a whole (minus the “.skp” extension). For example, “*BS01*”
2. An underscore character (“_”)
3. The attribute number, followed immediately by a brief description of the attribute itself. (e.g. “*01DoorMaterial*”)

The list of attributes associated with BuildEdge Pro’s dynamic components is too extensive to publish here, however, the following matrix provides examples of attributes that are commonly associated with BuildEdge dynamic components.

Please note that a handful of these attributes have a big, fat, bold “**NO**” listed in the *Edit* column. These attributes are **NOT** to be edited in any of the files! Making a change to the values associated with any of these attributes will cause problems when trying to place a door or window. In short, look, but don’t touch the attributes that have a “**NO**” in the *Edit?* column.

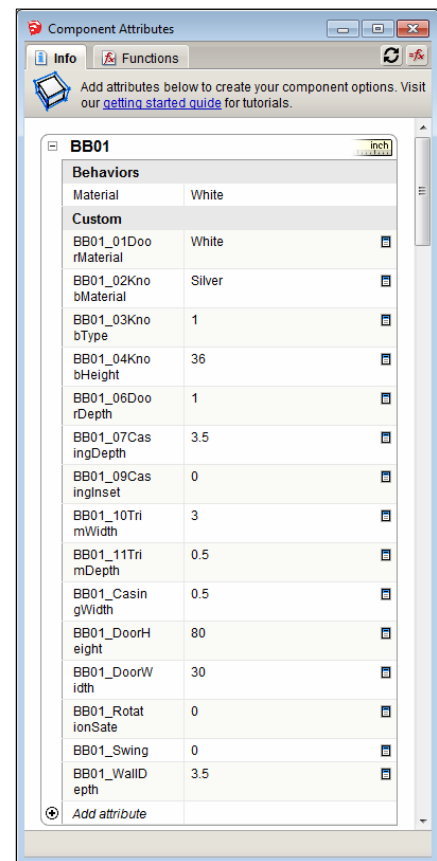


Figure 3: Component-level attributes for a standard swing door.

Door Attributes

NAME	DESCRIPTION	EDIT?	BIFOLD	BYPASS	CASED OPENING	DOUBLE	DOUBLE BIFOLD	GARAGE	ROUGH DOOR	SWING
01DoorMaterial	Specifies the type of material to be used when rendering a door (except for the door knob).	Yes	X	X	X	X	X	X	X	X
02KnobMaterial	If a knob is displayed on a door, it will be rendered in the material specified for this property.	Yes	X			X	X			X
03KnobType	Depending on the door <i>Type</i> , there are a variety of door <i>Knob Types</i> that can be applied. Options may include: <i>Knob</i> , <i>Handle</i> , <i>Push/Pull</i> , <i>Round</i> , and <i>Sphere</i> .	Yes	X			X	X			X
04KnobHeight	The vertical measurement from the bottom of a door to the center of its door knob.	Yes	X			X	X			X
05SwingAngle	The angle at which a door swings when it is toggled to the open position using SketchUp's <i>Interact</i> command.	Yes				X				X
06DoorDepth	The measurement of a door's thickness.	Yes	X	X		X	X	X		X
07CasingDepth	The measurement of the casing material that wraps around a door opening. This value defaults to the same depth as the wall into which the door is placed.	Yes	X	X	X	X	X	X		X
08DoorOverlap	The amount that bypass doors overlap each other when closed.	Yes		X						
09CasingInset	The distance a door's casing is moved "into" or "out of" the opening with which it is associated. (Note that the door will move along with its casing.)	Yes	X	X	X	X	X	X		X
10TrimWidth	The width of the material that is placed on the face of the wall surrounding the door opening.	Yes	X	X	X	X	X	X		X
11TrimDepth	The width of the material that is placed on the face of the wall surrounding the door opening.	Yes	X	X	X	X	X	X		X
12TopRailHeight	The height of the horizontal piece at the top of a multi-panel door.	Yes								X
13IntermediateRailHeight	The height of the horizontal piece below the rail in a three-panel or six-panel door.	Yes								X
14TopPanelHeight	The height of the top panels in a three-panel or six-panel door.	Yes								X
15LockRailHeight	The height of the horizontal piece in the middle of a multi-panel door.	Yes								X
16BottomRailHeight	The height of the horizontal piece at the bottom of a multi-panel door.	Yes								X
17StileWidth	The width of the vertical pieces on the left and right sides of panels in multi-panel doors.	Yes								X
18MuntinWidth	The width of the vertical member in the center of the door in multi-panel doors.	Yes								X
22Sections	The number of horizontal sections used to construct a garage door.	Yes						X		
CasingWidth	The user-defined width of the casing used for doors. The casing is placed between the actual door and the opening in the wall. The rough opening is calculated by adding the casing width to the width and height of the door.	NO	X	X	X	X	X	X		X
DoorHeight	The height of the actual door (as opposed to the opening created in the host wall).	NO	X	X	X	X	X	X	X	X
DoorWidth	The width of the actual door (as opposed to the opening created the host wall). In the case of components with multiple doors, this is the width of all of the doors together.	NO	X	X	X	X	X	X	X	X
RotationState	The angle at which a door rests in relation to its host wall.	NO	X				X			

Door Attributes *(continued)*

NAME	DESCRIPTION	EDIT?	BIFOLD	BYPASS	CASED OPENING	DOUBLE	DOUBLE BIFOLD	GARAGE	ROUGH DOOR	SWING
Swing	The direction in which a door is designated to swing. As the user places a door into a wall, they can toggle between the side of the wall that the swing is on, and whether it swings “right” or “left.” In door components, there are two doors, a “left” and a “right.” Toggling this attribute will toggle the visibility of these components causing only one to be visible at a time.	NO	X							X
WallDepth	The depth of the wall into which a door is being placed.	NO	X	X	X	X	X	X	X	X

Window Attributes

NAME	DESCRIPTION	EDIT?	FIXED	SLIDER (HORIZ)	SLIDER (VERT)	ROUGH OPENING
01WindowMaterial	Specifies the type of material to be used when rendering a window.	Yes	X	X	X	X
06CasingDepth	The measurement of the casing material that wraps around a window opening. This value defaults to the same depth as the wall into which the window is placed.	Yes		X		
07CasingWidth	The user-defined width of the casing used for windows. The casing is placed between the actual window and the opening in the wall. The rough opening is calculated by adding the casing width to the width and height of the door.	Yes	X	X	X	
08WindowOverlap	The amount that windows overlap one another when closed.	Yes	X	X	X	
09CasingInset	The distance a window's casing is moved "into" or "out of" the opening with which it is associated. (Note that the window will move along with its casing.)	Yes	X	X	X	
10TrimWidth	The width of the material that is placed on the face of the wall surrounding the window opening.	Yes	X	X	X	
11TrimDepth	The thickness of the material that is placed on the face of the wall surrounding the window opening.	Yes	X	X	X	
19VerticalMullions	The number of evenly spaced, vertical muntins in a window. If this value is set to "0", vertical muntins will be hidden. (Note that muntins are centered on the glass.)	Yes	X	X	X	
20HorizontalMullions	The number of evenly spaced, horizontal muntins in a window. If this value is set to "0", horizontal muntins will be hidden. (Note that muntins are centered on the glass.)	Yes	X	X	X	
21MullionSize	The dimension of the square cross-section of the muntins.	Yes	X	X	X	
36SashWidth	The width of sash material that runs around the inside of a window opening. The default <i>Sash Width</i> is the same as the wall into which the window is placed.	Yes	X	X	X	
37RailHeight	The distance from the bottom of a window to the top of its rail.	Yes	X	X	X	
38SashOffset	This is the offset of the sash (and all members within) from the face of the wall on which it resides.	Yes	X	X	X	
41ShowTopTrim	This is a toggle that shows or hides the trim at the top of a window. This attribute can be used to hide sections of trim and/or to combine multiple windows into one.	Yes	X	X	X	
42ShowBottomTrim	This is a toggle that shows or hides the trim at the bottom of a window. This attribute can be used to hide sections of trim and/or combine multiple windows into one.	Yes	X	X	X	
43ShowLeftTrim	This is a toggle that shows or hides the trim on the left side of a window. This attribute can be used to hide sections of trim and/or to combine multiple windows into one.	Yes	X	X	X	
44ShowRightTrim	This is a toggle that shows or hides the trim on the right side of a window. This attribute can be used to hide sections of trim and/or to combine multiple windows into one.	Yes	X	X	X	
WallDepth	The depth of the wall into which a window is being placed.	No	X	X	X	X
WindowHeight	The height of the opening into which the window is being placed. Since there is no casing in a window, the height of the window and the opening in the wall are the same.	No	X	X	X	X
WindowState	Reflects the windows open/close status.	No		X		
WindowWidth	The width of the opening into which the window is being placed.	No	X	X	X	X

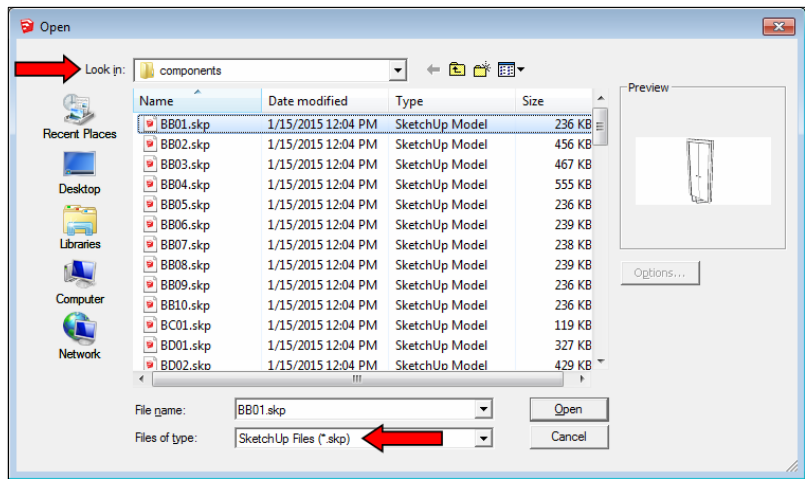
Example: Editing Dynamic Components

As an example of modifying a BuildEdge Pro dynamic component, we will walk you through the process of changing the default hardware on a swing door from a door *Knob* to a door *Handle*.

TIP! We highly suggest that you make a backup copy of your *Components* folder prior to proceeding. That way, you will be able to revert to your original component files, should you run into trouble.

1. Open SketchUp Pro 2015. (Note, the Professional edition of SketchUp is required to edit dynamic components *globally*.)

2. **From the SketchUp menu bar, click on File → Import.** A SketchUp *Open* dialog box, like the one pictured at right, will pop open.



3. Make sure that the “*Files of type*” field at the bottom of the dialog box is set to “*SketchUp Files (*.skp)*”.
4. Use the “*Look in*” field to navigate to the folder where your BuildEdge dynamic component files are stored

WINDOWS

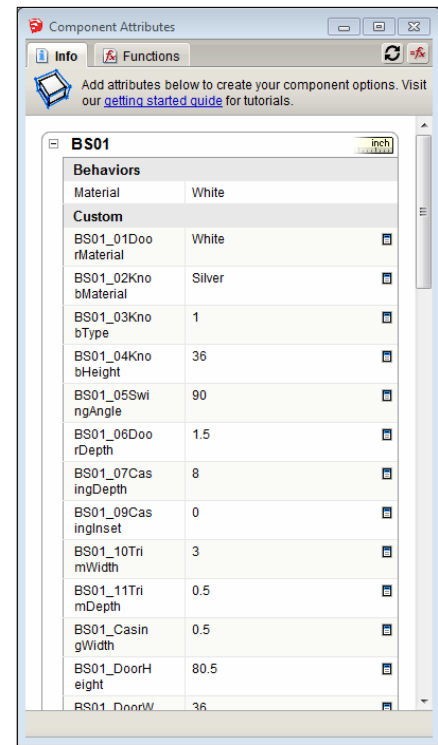
C:\Users\[User Name]\ AppData\Roaming\SketchUp\SketchUp 2015\SketchUp\Plugins\ BuildEdge\Resources\Components

MAC

Application Support/Sketchup 2015/SketchUp/Plugins/ BuildEdge/Resources/Components

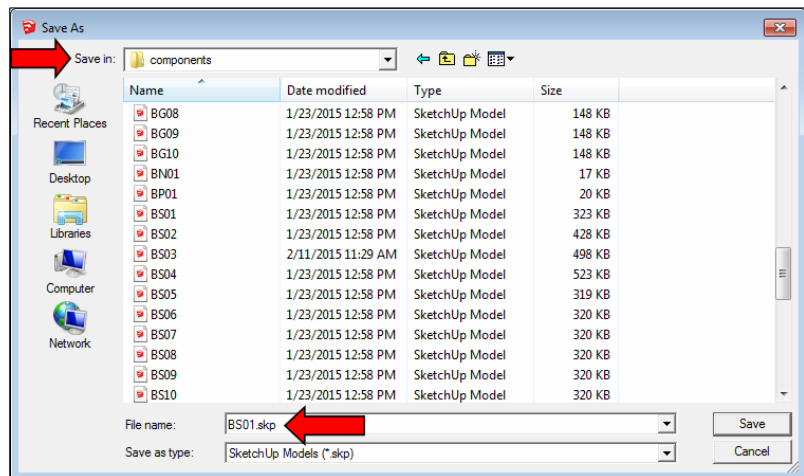
5. From the list of files, select “*BS01.skp*” and then click on the *Open* button. The *Open* dialog box will close, and a “floating” (i.e. moving) copy of the BuildEdge “*Swing Door*” dynamic component will open on SketchUp’s draw screen.
6. Click once with your mouse to lock the dynamic component in place on the draw screen.
7. With your dynamic component now locked in place, right-click anywhere on the component to select it. The component outline will change from black to blue to indicate that it has been selected.

8. From the right-click menu, select *Dynamic Components* → *Component Attributes*. A *Component Attributes* dialog box, like the one pictured at right, will open. Notice that the names for the various door attributes are listed in the column on the left, while the default values for each attribute are listed in the column on the right.
9. Click on the attribute row entitled “*BS01_03KnobType*.” Notice that the default value for this attribute is “1.” The number “1” designates that, by default, a standard door “*Knob*” will be added to all BuildEdge swing doors. Changing this value to the number “2” will add a door “*Handle*” rather than a door “*Knob*” to your doors as the default hardware.
10. Double-click on the number “1” to select it. Change the number “1” to a “2” and hit the *Enter* key on your keyboard to lock-in your change. You will notice that the door’s hardware changes from a *Knob* to a *Handle* on the SketchUp draw screen.
11. Close the *Component Attributes* dialog box by clicking on the *Close* button in the upper-right-hand corner.



The *Component Attributes* window for a BuildEdge Pro Standard Swing Door.

12. Now, to save your changes, **right-click on the component once again and, from the right-click menu, select *File* → *Save As***. A “*Save As*” dialog box will open, as pictured at right.



13. Navigate to your components folder at the path listed in Step 4.
14. In the *File Name* field, type in “*BS01.skp*” and then click on the *Save* button to close the *Save As* dialog box.
15. Now, if you’ve performed steps 1 – 14 correctly, each time you add a swing door dynamic component to a BuildEdge model, it will come equipped with a door *Handle* rather than a door *Knob* as the default hardware.

WARNING! When you are saving changes to a dynamic component file, it is imperative that you right-click on the component and chose *Save As* from the context menu, rather than going to the *File* menu and clicking on *File* → *Save As*. Executing the latter procedure will cause numerous problems with your dynamic component file!